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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,273	12/02/2003	Anders Larsson	07589.0081.NPUS01	1272
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NOVAK DRUCE & QUIGG, LLP 1300 EYE STREET NW 400 EAST TOWER WASHINGTON, DC 20005			EXAMINER EDGAR, RICHARD A	
			ART UNIT 3745	PAPER NUMBER

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/707,273	Applicant(s) LARSSON, ANDERS	
	Examiner Richard Edgar	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on an amendment filed 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-23 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Applicant's arguments filed 12 December 2005 have been fully considered but they are not persuasive.

Initially, it is noted that applicant has not specifically pointed out the specific distinctions believed to render claim 6 patentable over the applied references as is required in 37 CFR §1.111(b). It is only stated that claim 6 has been written in independent form, and that original claim 6 was indicated as allowable if written in independent form. However, original claim 6 has not been written in independent form. The limitation "said first curved portion of said at least one blade extending from said inner radial end to said second curved portion, and said second curved portion extending from the first curved portion outwardly toward said outer radial end" has been omitted from original claim 6.

Next, applicant has stated that "[n]ewly added claims 12, 13, 14, 15 are claims 6,7,8,9 respectively rewritten in independent form." This is not accurate based upon the omission of "an edge of said at least one blade that is opposite an edge that is connected to the carrier has an oblique bevel with a tip directed toward the operational direction of impeller rotation" in claim 15. Note that this omission renders the claim indefinite for the recited "said oblique bevel."

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Next, applicant has attacked the examiner's reliance on the prior art figures in rejecting the claims. Specifically, applicant has cited §2125 of the MPEP and related case law in an attempt to persuade the examiner in withdrawing the rejection since there is no mention of a scale used in the prior art. Applicant has misunderstood the cited section. Generally, what the section is conveying, is that when a prior art reference does not say the drawings are to scale, a patent applicant cannot limit the prior art figures to their shown dimensions. In other words, the dimensions of the drawings are not exclusive to that shown. Rather, the dimensions may be interpreted for what they reasonably disclose and suggest to one of ordinary skill in the art. In the instance case, the prior art drawings expressly show the claimed features. *In re Mraz*, 455 F.2d 1069, 173 USPQ 25 (CCPA 1972).

Drawings

The drawings are objected to because the view numbers must be preceded by the abbreviation "FIG." See 37 CFR §1.84(u)(1).

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "pump housing wall which is parallel and close to said disk plane surface of said carrier" (claim 10) must be shown or the feature(s) canceled from the claim(s). Similarly, the "disk oriented parallel to the disk plane surface of said carrier and connected to said plurality of blades, said disk having a central inflow opening for introducing media to be pumped by said

centrifugal pump" (claim 11) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 10, 15-19 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "close" in claim 10 is a relative term which renders the claim indefinite. The term "close" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claims 16-19 depend from claim 10, and are therefore indefinite themselves.

Claim 15 recites the limitation "said oblique bevel" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "said oblique bevel" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "said oblique bevel" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-3, 5, 6, 11, 12, and 20, and as far as claims 10 and 16 are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 867,874 (Capell hereinafter).

Capell shows a closed-type centrifugal impeller having in Fig. 3 (right-side embodiment) blades *g* extending in the radial direction wherein the radially inner portion of the blade is concave in the direction of rotation and the radially outer portion of the blade is convex in the direction of rotation. As seen in Fig. 3 (right-side) the blade *g* extends to the periphery of the impeller. As can be seen from Figure 1 below, the radially inner curved portion (C) is shorter than the radially outer curved portion (D). The length of C is between 10-40% the length of C+D. The impeller is of a closed-type with a central opening (see Figs.). Capell teaches that the blades may be inclined forward (see page 1, lines 77-80).

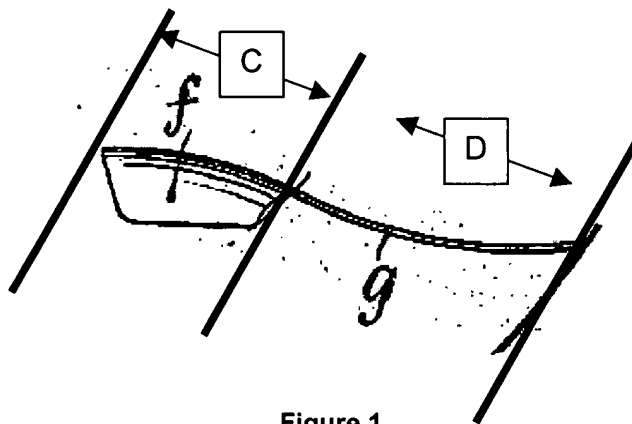


Figure 1

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 13 and 21, and as far as claim 17 is definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 867,874 (Capell hereinafter) as applied to claims 6, 10 and 11 above, and further in view of a design choice.

Capell teaches impeller vanes being forwardly inclined (page 1, lines 77-80).

Capell does not address the dimensions of the angle. However, the angle is acute, i.e. between 0 and 90 degrees, which includes 45 to 87 degrees. Applicant has not disclosed that having the blades extend at this specific angle solves any stated problem or is for any particular purpose. Moreover, it appears that the blades of Capell, or applicant's invention, would perform equally well with the blades extending at any acute angle.

Accordingly, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have modified Capell such that the blades on the impeller extended at an angle between 45 and 87 degrees because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Capell.

Claims 8-9, 14 and 22, and claims 15, 18, 19 and 23, as far as they are definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 867,874 (Capell hereinafter) as applied to claims 6, 10, and 11 above, and further in view of United State Patent No. 5,762,469 (Yu hereinafter).

Capell shows an impeller with vanes extending in the radial direction and also extending axially from a carrier disk (see FIGs). Capell does not teach the blades of the impeller having a bevel or chamfer, although Capell does suggest that the blades may have various alternative designs for the purpose of delivering large output, maximum efficiency or high/low pressure (see page 1, lines 76-84).

Yu shows that impeller vanes should have a chamfer, or bevel 70 thereon for the purpose of improving impeller performance. The bevel is between 5 and 30 degrees (see col. 3, lines 25-27).

Since Capell teaches to alter the blades to improve the impeller performance, and Yu teaches that a blade bevel improves the impeller performance, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the blades of Capell to have a bevel thereon, as taught by Yu for the purpose of improving the impeller performance.

Contact Information

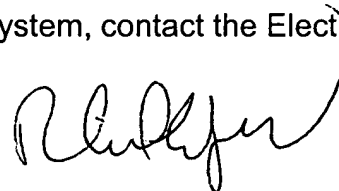
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-

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4816. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard Edgar
Examiner
Art Unit 3745

RE